Preliminary Damage Assessment in Bullhead City, AZ

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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: _____

Abstract

The problem addressed by this project was a lack of analysis of the policies, procedures, and forms to be used in the event of a catastrophic, area-wide disaster affecting Bullhead City, Arizona. The purpose of this research was to identify existing policies, procedures, plans, and forms and identify opportunities to increase community preparedness for a catastrophic, area-wide disaster. The descriptive research method was used to answer the following questions: a) What personnel are currently expected to perform preliminary damage assessments? b) Are there other individuals and/or groups who could be trained to augment current assets? c) What forms are currently available to facilitate the preliminary damage assessment process? d) Are the current forms sufficient to ensure the community has the best opportunity for reimbursement of disaster response expenses? e) What policies, procedures, plans, or forms need to be developed to improve the preliminary disaster assessment process in Bullhead City? In-person interviews were conducted with senior leaders from Mohave County Emergency Management, Bullhead City Fire Department, and Bullhead City Police Department. Information obtained during the interview process showed a high degree of communication and collaboration among the agencies, but a lack of a formal policy, procedure, or plan guiding the damage assessment process. Recommendations included continuing to support CERT operations; maintain and enhance communication and collaboration among emergency response and emergency management agencies; develop a formal policy, procedure, or plan to guide damage assessment, reduce the likelihood of redundancy of efforts, and provide accountability for damage assessment team; and seek opportunities to implement technology solutions for damage assessment when possible.

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Introduction

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Background and Significance

The Bullhead City Fire Department (BCFD) serves the Bullhead City Fire District in central western Arizona. The municipality of Bullhead City is contained within the Fire District boundaries and contracts with the Fire District for fire and emergency services. Bullhead City is located on the east bank of the Colorado River directly across from Laughlin, Nevada on the west bank and approximately twenty miles north of Needles, California, also located on the west bank of the Colorado. The state lines of Arizona, California, and Nevada follow the Colorado in this area known as "The Tri-State." The Fire District is governed by a five-member elected board.

Neighboring fire departments / districts include Clark County (Nevada) Fire Department to the west, Golden Valley Fire District to the north, Oatman Fire District to the east, and Fort Mojave Mesa Fire District to the south. Mutual aid and automatic aid agreements are in place with all neighboring departments / districts. Golden Valley Fire District operates a combination career and volunteer department. Oatman Fire District are fully volunteer-staffed. BCFD, Clark County, and Fort Mojave Mesa are career departments.

BCFD protects a 45.9 square mile fire protection district and a 230 square mile EMS district from five fire stations with twenty fire suppression personnel and a Battalion Chief assigned to each of three shifts. Suppression personnel work a 48/96 schedule. Two inter-facility transport ambulances are also staffed with non-fire suppression personnel to provide transport from the two small community hospitals in the area to Phoenix (230 miles) or Las Vegas (100 miles) when patients require specialized care unavailable in the river communities. Three fire stations staff an engine and an ambulance, one staffs an engine and an ambulance with a second ladder truck cross-staffed as required, and one station houses a ladder and an

ambulance. The department also operates two boats for river emergencies, one of which is also equipped for marine firefighting. The department participates in regional hazardous materials, dive rescue / recovery, and technical rescue teams with other Mohave County fire districts as well as provides a full complement of plan review, code enforcement, and public education services.

The Bullhead City Police Chief is also the Emergency Manager for the municipality of Bullhead City. There are no dedicated Emergency Management personnel for the city. Mohave County Emergency Management is staffed by the Emergency Manager, Assistant Emergency Manager, and a small staff. The Fire District boundary is very nearly contiguous with the municipality boundary. The EMS district outside the Fire District boundary is very sparsely populated. Mohave County Emergency Management is responsible for providing emergency management services to the areas of the Fire District outside the city limits of Bullhead City.

Davis Dam, which can be seen from the NV 163 / AZ 95 bridge which connects Bullhead City to Laughlin, Nevada holds back Lake Mohave. Lake Mohave covers forty-four square miles and contains 1.8 million acre-feet of water with an average depth of seventy-five feet (http://www.nps.gov). The potential for dam failure is small, but, should it occur, the damage in the area of the Fire District along the Colorado River would be profound.

Flash flooding and high wind events are much more likely disaster scenarios for the Fire District than a dam failure. Flooding in 1974 caused $1.7 million in property damages during an event that ultimately was declared a state disaster (significant flooding also occurred in Lake Havasu City). In 1976, flooding cut a twenty to forty foot deep canyon across highway 95 isolating Bullhead City from the rest of the state and causing over $3 million in damages. A

1989 thunderstorm downed twenty-four power poles and damaged over seventy-five homes (twenty-two of which were ultimately condemned) (*MC Hazard Mitigation*, 2010).

The Executive Analysis of Fire Service Operations in Emergency Management (EAFSOEM) course "is designed to improve the knowledge, skills, and attitudes (KSAs) required of fire service leaders when applied to large-scale multiagency emergency incidents in their communities (*EAFSOEM*, 2014, p. 1-9)." This research project was designed to increase knowledge of the policies and procedures in place to perform preliminary disaster assessments in the wake of a large-scale event requiring multiagency response and provide guidance to potentially increase the skill with which those assessments are expeditiously performed. This project supports U.S. Fire Administration goals of a) improving local planning and preparedness, b) improving fire and emergency services' capability for recovery from all hazards, and c) improving the fire and emergency services' professional status. Planning and preparedness improvements come from suggestions to increase efficiency and expediency of preliminary damage assessment processes. Fire and emergency services' capability to recover from large-scale multiagency incidents is based in part on the ability to receive state and federal disaster funds; these funds are distributed more quickly when the preliminary disaster assessment process is completed in a timely and organized matter. A more efficient and effective response in a time of community crisis bolsters the professional status of the organizations responsible for ensuring community recovery efforts.

Literature Review

Personnel involved in preliminary damage assessment

The responsibility for ensuring damage assessment information is gathered and submitted to state authorities lies with county emergency management agencies across all documents reviewed in the literature review process. Who is actually responsible for conducting the assessments, especially assessments that occur during or immediately after the disaster, varies widely from jurisdiction to jurisdiction.

The City of Los Angeles places the responsibility for collecting and forwarding disaster assessment information with the police department. The fire department assumes only a minor role and in truly major disasters is not expected to contribute any information due to their focus on responding to immediate threats to life and property (*LA City*, 1998). East Baton Rouge Parish (Louisiana) describes a process in their *Emergency Operations Plan* whereby the Emergency Manager appoints damage assessment teams composed of representatives from various parish departments, support agencies, and, potentially, the private sector. No emergency response entities are included on their list of potential team members (although the plan states the Damage Assessment Officer is responsible for training team members, there is no clear direction about how many teams will be trained, how many individuals comprise a team, or even if this training is supposed to occur during the preparedness phase or just-in-time once a disaster is looming or has occurred) (*Baton Rouge*, 2009). Some fire departments, including those in Fairfax County, Virginia (Strickland, 1998), Richardson, Texas (Hotz, 2002), and Boca Raton, Florida (Scott, 2006) have decided preliminary damage assessment is a task the fire department should lead.

Two authors believed emergency responders would be overwhelmed with operational tasks which would make them unavailable to perform damage assessment. Grendze suggests his community will need to pull personnel from all non-emergency response city departments to field damage assessment teams (Grendze, 2010). Duzzny, speaking from the emergency management perspective, also realizes the potential for having little to no damage assessment information coming from the first response community and proposes tapping in to expertise available from private industry (Duzzny, 2002).

Emergency managers are ultimately responsible for collecting disaster assessment information, especially when the event rises to the level of a disaster declaration and requests are to be made for financial assistance from the state or federal governments. The literature review, however, illustrates not only a clear lack of any specific mandate from the federal government regarding who will perform the assessments, but also a wide array of proposed solutions from community to community. As disparate as community allocation of resources tends to be, it would be a very difficult task to achieve consensus on assigning damage assessment duties to any one particular group. Political and economic forces vary greatly across the nation and communities should have the flexibility to determine how best to accomplish the task with the resources available. Unfortunately, many communities likely are waiting until a disaster occurs to assign responsibility or do any disaster preparedness whatsoever.

Preliminary damage assessment policies, procedures, and plans

One of the first complexities encountered when reviewing the literature about preliminary damage assessment is the lack of standardized terms from county to county, state to state, federal agency to federal agency, and even within individual organizations. Terms used to identify the damage assessment conducted in the immediate aftermath of a disaster include “rapid damage

assessment (Grendze, 2010) (Hotz, 2002)," "snapshot survey (Scott, 2006)," and "windshield survey (Majka, 2002) (Hayes, 2007)." The National Fire Academy Course which initiated this research is ambiguous at best when it defines initial damage assessment as an activity conducted while emergency operations are still in progress and differentiates it from preliminary damage assessments which should be conducted after the incident is stabilized in the student manual, but teaches during lectures and in-course activities that the initial damage assessments contribute to the damage assessment used to support disaster declarations (*EAFSOEM*, 2014).

Though qualifying for Public Assistance funding from FEMA should not be the primary goal, ensuring reimbursement is going to be a high priority for any mayor or city / town / county manager. FEMA's Public Assistance Guide (*PA*-322, 2007) and Public Assistance Applicant Handbook (*PA-323*, 2010) describe in detail the procedures for applying for Public Assistance funding, what qualifies, how much funding agencies may be eligible to receive, how they will be reimbursed, what qualifies for reimbursement, etc. What these two FEMA publications do not address is any direction for how best to accomplish the damage assessment. 44 CFR 206.33 specifies who will compose the damage assessment team for a preliminary damage assessment, but preliminary damage assessment as defined in federal statute occurs many hours or even days after the event (except in unusually severe incidents) and is guided by previous damage assessment efforts which are not outlined in statute (Preliminary damage assessment, 1990). Even FEMA's course designed to make emergency management professionals experts on disaster assistance is silent on the specifics of what a plan to accomplish damage assessments should look like (*IS-208a*, 2010). New York State's Disaster Assessment Guidance at least provides some thought-provoking direction, even if it falls short of outlining a plan. The guidance reminds the user that damage assessment first and foremost is about allocating scarce

resources to save as many lives and as much property as possible. Funding issues are important, according to the guidance, but are always secondary to life safety. The guidance also points out that damage assessment is not all about forms. Some of the most useful information in mitigating a disaster may not fall neatly into a box on any form (http://www.dhses.ny.gov).

The one federal document which comes closest to giving useful direction on developing a disaster assessment plan / annex is the Comprehensive Preparedness Guide (CPG) 101. CPG 101 places disaster assessment in ESF-3 (Public Works and Engineering) and recommends inclusion of what actions will be taken to ensure damage assessment on public and private property, how the information will be organized and communicated to state and federal officials in twelve to thirty-six hours, and which specific forms will be used (*CPG 101*, 2010).

In the future, damage assessment could become an automated process requiring little human intervention. Studies have been conducted in earthquake-prone regions attempting to refine computer programs able to take input from seismological monitoring equipment and predict the extent of damage produced (Eguchi et al., 1997). One technology initially developed for use in areas susceptible to earthquakes (Visualizing Impacts of Earthquakes With Satellites or VIEWS) has been deployed in the aftermath of hurricanes, wildfires, and tornadoes to attempt to refine the abilities of the system to accurately assess damage in the aftermath of a disaster (McMillan et al., 2008). Even though some advanced technological tools may be a few years away from being field deployable on a widespread basis, there are high tech tools available which can help emergency managers and first responders get a better real-time damage assessment right now should disaster strike their community. Many communities are already heavily invested into GIS systems and have much if not all of their infrastructure layered into their mapping programs (McDowell & Moore, 2002). One program currently on the market

which takes advantage of a jurisdiction's GIS data, property valuation data, and the GPS capabilities of tablets and smartphones is CrisisTrack. CrisisTrack works on both Apple and Android devices and can provide real-time damage assessment information when cellular communications are functioning. If cellular communications are down, the devices store field reports for download to the network at a later time. The app captures photographs of damage and fixes the photographs GPS location and, if linked with property assessment data, can begin damage estimates based on the percentage destroyed inputs of damage assessment teams (www.crisistrack.com).

In May of 2012, the Office of the Inspector General (OIG) published a report on the preliminary damage assessment process FEMA uses to determine eligibility for Presidential disaster declarations and subsequent Public Assistance funds. The OIG noted several shortcomings in the methods currently used by FEMA. The report noted that the federal regulation (44 CFR 206.33) which directs FEMA to perform damage assessments provides no guidance on how those assessments should be conducted. The authors stipulate that frequent failure by FEMA to actually perform a thorough assessment due to a tendency to stop the process when the "threshold[1]" for damage is reached may even be a violation of the Stafford Act, the

[1] One of the most interesting (and humorous) finds during the literature review process for this project was FEMA's "technical comment" to the OIG requesting the term "threshold" be replaced with "statewide per capita indicator" despite the widespread use of the term "threshold" within FEMA including its use in the IS-208a student manual, a course designed to prepare emergency managers for interaction with FEMA during the PA PDA process.

federal law upon which almost all of FEMA's disaster response activities are based. The OIG recommended that FEMA improve the methods used at the federal level to perform disaster assessments, update the methods used to calculate eligibility for Public Assistance, and create a more realistic method of measuring states' ability to finance disaster recovery without federal assistance. Not surprisingly, FEMA disagreed with the last two recommendations relying mainly on an argument that sounded a lot like "if it's not broke, don't fix it (Department of Homeland Security Office of Inspector General [DHS OIG], 2012)."

When it comes to policies, procedures, and plans for performing damage assessment in the immediate aftermath of a disaster, it is clear communities cannot rely on the federal government for guidance and, even after they arrive, should anticipate federal disaster assessment team efforts may fall short of the effort required to properly direct recovery efforts for the entire community. Technology solutions are available to make the damage assessment process more efficient and effective and more advanced technology products are on the horizon which will make the process less manpower intensive. It is not difficult to envision a day in the not too distant future where 360 degree view cameras mounted on every police car, fire department vehicle, ambulance, public works vehicle, and even private utility company vehicles will transmit live, geotagged video data to the EOC where much of the initial damage assessment process could be conducted in a climate-controlled environment.

The literature review process assisted in refining the questions asked during the interviews with local emergency response and emergency management personnel in Bullhead City / Mohave County. The policies, procedures, plans, and tools utilized in other jurisdictions examined in this process also provided a broad array of approaches and processes with which to

compare those existing and anticipated to be used in the event of a catastrophic, area-wide disaster in Bullhead City to determine potential best practices which might be implemented.

Methods

Participants

Three subjects were interviewed for this project: Mohave County Assistant Emergency Manager Mike Browning, Bullhead City Fire Department Fire Marshal Jim Dykens, and Bullhead City Police Chief Brian Williamson. Mohave County Emergency Management is ultimately responsible for ensuring disaster assessments are completed in the wake of a disaster, train CERT members in disaster assessment, and would coordinate any request from Bullhead City through the County to the Governor's office for a disaster declaration. The Bullhead City Fire Department works most directly with CERT members on a consistent basis and would be intimately involved in EOC operations and emergency response after a catastrophic, area-wide disaster. Chief Williamson is the emergency manager for the City of Bullhead; in this capacity, the Chief would be responsible for directing / seeking assistance in disaster assessment and requesting a disaster declaration from the County.

Procedures

The questions used to direct the interviews are included in Appendix A of this document. Face-to-face interviews were conducted with each of the participants. Mike Browning was interviewed in Kingman, Arizona on May 14th, 2014. Chief Dykens was interviewed in Bullhead City, Arizona on June 16th, 2014. Chief Williamson was interviewed in Bullhead City, Arizona on June 30th, 2014.

Limitations

During the interviews conducted, it was determined that Lake Havasu City (also located in Mohave County) might have had information which could contribute to the furtherance of this research. The Lake Havasu City Fire Chief was contacted and a request for information sent

through him to the leader of the CERT in Lake Havasu. No communication was received from the Lake Havasu City CERT prior to the submission of this project. The possibility exists that information on local best practices in disaster assessment which could have been used to offer additional recommendations for improvement was not captured due to this inability to communicate with the CERT leader.

Results

Interview responses

In response to question 1 – What are the community-wide risks faced by Bullhead City (flash flood, severe winds, any others?)? – all three participants agreed with the findings from the Mohave County Multi-Jurisdictional Hazard Mitigation Plan which placed flash flood and severe winds as the most likely disasters to strike the Bullhead City area of Mohave County. Chief Dykens emphasized that the potential for a dam failure should not be overlooked and discussed the large impact such an event would have on the areas of the community situated along the Colorado River south of the dam. Although outside the scope of the disaster assessment focus of this project, it was interesting to note the effects of several years of involvement in emergency management on the comments from Chief Williamson. The Chief's concerns about civil unrest due to a sustained power outage and the effects on the community of a major influx of displaced residents of California in the event of a major earthquake west of the state line show a clear tendency to think outside the box and outside the borders of his area of responsibility at a wide array of forces that could impact day-to-day life in Bullhead City.

Question 2 was "If a disaster happened in Bullhead City tomorrow, who would be responsible for ensuring the preliminary disaster assessment is conducted?" The unanimous response to this question indicated the Bullhead City CERT would be relied on to do the bulk of the ground work in the disaster assessment process. All participants indicated that the city's EOC would be activated and that Mohave County Emergency Management would be instrumental in coordinating the process. The police department has two reserve officers who have received some CERT / emergency management / disaster assessment training, but the Chief was quick to agree with the stipulation that in the event of a disaster affecting a significant

portion of the city, these officers would likely be unavailable for disaster assessment due to other duties supporting police department operations.

When asked if there was a plan outlining who will conduct disaster assessments, the Assistant Emergency Manager stated there was basic information in the county's Emergency Operations Plan, but all participants agreed there was no true plan for conducting disaster assessment.

The fourth question asked the participants who they believed was best suited to perform disaster assessment. The participants agreed the CERT was best to bear the bulk of the duties which would be required in the disaster assessment process. Bullhead City had approximately twenty active volunteers at the time of this writing. All members receive training in disaster assessment as part of their initial and on-going training. Interestingly, the CERT is considered a Mohave County asset, but is shared with the Bullhead City Fire Department which coordinates on-going training and is the most frequent recipient of their services (the CERT is requested / dispatched by the Bullhead City Police Department which operates the communications center for the city police and fire departments from Bullhead City south to the California line). Chief Williamson, once again donning his emergency manager hat, asserted that city public works, engineering, and code enforcement staff would be needed to evaluate structural integrity and determine habitability in certain cases.

Questions 5 through 9 became somewhat mute once the interview responses began illustrating a unified agreement that the Bullhead City CERT was the most appropriate force to perform disaster assessment. Other organizations which were mentioned by participants as potentially being able to offer some semblance of assistance to the CERT (most likely integrated into the process by being teamed with at least one CERT member) were: Red Cross volunteers,

Arizona Department of Emergency Management (ADEM) volunteers, Mohave County Sheriff's Office volunteers, Lake Havasu CERT members, Mohave Valley CERT members, Mohave County contractors, and Clark County and/or other Arizona county resources requested via mutual aid. Red Cross has a very limited number of volunteers along the Colorado River in Arizona. ADEM volunteers and other mutual aid resources would likely require twenty-four hours or more to mobilize. Mohave County Sheriff's Office volunteers, like BCPD's reserve officers, would likely be unavailable due to performing more law enforcement related duties. Lake Havasu and Mohave Valley CERT members would be able to be mobilized quickly if the event was localized to Bullhead City, but should the nature of the disaster affect all of the river communities, CERT members would have a duty to meet the needs of their communities and would be unavailable to respond to assist Bullhead City.

When asked "Does Mohave County (or Bullhead City) have its own preliminary disaster assessment form?" both Chiefs indicated the CERT members use the "Mohave County" form. Mike Browning indicated the CERT members are trained to use a Red Cross form (Appendix B). The form provided by Mr. Browning is an older version of Red Cross forms 5739A and 5739B.

In response to question 11 regarding disaster assessment training, all participants confirmed that CERT members receive some disaster assessment training as part of their initial training and refresher training is offered on a roughly annual basis by Mohave County Emergency Management.

Question 12 asked about other Mohave County communities preliminary disaster preparations. All participants discussed the strength of the Lake Havasu City CERT and submitted the possibility the team might have a written plan for conducting damage assessment.

When asked what other Arizona communities might be able to offer in the way of a disaster assessment plan. Mike Browning suggested Maricopa County (the county in which the state capital of Phoenix is located) might have a more developed plan, but he was unaware of any specifics. A search of Maricopa County Department of Emergency Management website produced no evidence of Maricopa having a disaster assessment plan (the only reference found to disaster assessment was the naming of disaster assessment liaisons in the hazard mitigation plan. Neither of the Chiefs had knowledge of any Arizona communities with a well-developed plan for disaster assessment.

The participants final question sought suggestions to help Bullhead City better prepare to conduct preliminary disaster assessments. Mike Browning advised that the topic had come up at a recent homeland security council meeting and that the county plans to include disaster assessment in upcoming tabletop and field exercises leading up to the annual statewide exercise. Chief Dykens expressed his opinion that efforts should be made to ensure that all CERTs utilize the same form to avoid confusion or the need to provide just in time training should CERT members from neighboring communities respond to assist with disaster assessment in Bullhead City. Chief Williamson verbalized his belief that the county and communities should continue to support the CERTs to ensure the viability of that resource and also discussed the need for planning to integrate public works and code enforcement personnel onto disaster assessment teams with the CERT members in the event of a disaster.

Correlation to research questions

a) What personnel are currently expected to perform preliminary damage assessments? The participants were unified in their responses and indicated Bullhead City's CERT has been trained to fulfill this function.

b) Are there other individuals and/or groups who could be trained to augment current assets? The only suggestion regarding others who might be integrated into the damage assessment process was the mention of public works and code enforcement personnel. These individuals would provide technical expertise, but would not be expected to bear a significant portion of the damage assessment burden.

c) What forms are currently available to facilitate the preliminary damage assessment process? Mohave County currently uses a form previously produced by the American Red Cross.

d) Are the current forms sufficient to ensure the community has the best opportunity for reimbursement of disaster response expenses? Since the current forms are not the current forms being used by the American Red Cross and since the current forms are not designed to report information in the same format as the Arizona and FEMA reporting forms, it would be hard to argue that the current forms offer Bullhead City the best opportunity for reimbursement.

e) What policies, procedures, plans, or forms need to be developed to improve the preliminary disaster assessment process in Bullhead City? In the absence of a written policy, procedure, or plan for disaster assessment any document providing guidance in this regard would be an improvement over the current state of having no policy, procedure, or plan whatsoever. At a minimum the county should review and adopt the current American Red Cross disaster assessment form. As an alternative, the county should consider transitioning to the state disaster assessment forms.

Discussion

There were two extremely positive findings during the interview process. First, the presence of regular communication among the three agencies was evident from the uniformity of responses recorded. Second, there was obviously an emergency management mindset within the fire and police departments which fostered an ability to think beyond the responsibilities of their individual departments and beyond the boundaries of their service areas and see "big picture" challenges and opportunities. These findings indicate strengths in the organizations researched which have been sorely lacking in similar organizations in the author's experience.

All three organizations were also unified in their enthusiastic support of the CERT programs in Mohave County. This unified support bodes well for the long-term health of the Bullhead City CERT. The familiarity with and support of the program by the upper levels of all three agencies is likely to result in the organization continuing to maintain a strong sense of purpose and should improve volunteer retention for the organization.

Unlike in more urban areas (Duzzny, 2002), Mohave County is large in geographical area (the northern part of the county must be accessed by driving through Nevada and Utah and back into Arizona due to the presence of the Grand Canyon) and small in population. With this smaller population comes a decreased number of available resources from which to draw. The contractors in Mohave County are fewer than in the area referred to by Duzzny and spread out over a much larger area. Providing initial and refresher training to this geographically dispersed group would be difficult and receiving a timely response of enough members to provide any real assistance would be a near impossibility.

The enormous emergency response capabilities of larger metropolitan communities (*LA City*, 1998) is far beyond any staffing which could be mustered in a community the size of

Bullhead City. Emergency response and emergency management leadership in Mohave County in general and Bullhead City specifically recognize the fact that their resources will be overwhelmed in an effort to respond to the most critical calls for emergency services in a timely fashion. Attempting to deploy sparse resources in what would likely be a less than comprehensive effort at damage assessment when lives are at risk and property damage is continuing would be counterproductive. Far too many agencies fail to see the future negative consequences of agreeing to take on a mission they lack the resources to fulfill.

Mohave County does not currently have satellite mapping (Eguchi et al., 1997), GIS-linked mobile computing (McDowell & Moore, 2002), or real-time electronic damage assessment capability (www.crisistrack.com). As these technologies mature and their use becomes more common, prices will decrease bringing more technology options within reach and federal funding sources may become available. Mohave County Emergency Management is constantly seeking ways to leverage technology to improve the preparedness and safety of the county's responders and citizens. On the day of the interview with Mike Browning, he was field testing GPS-enabled two-way radios in the aftermath of the wildfire disaster in Arizona which cost the lives of nineteen firefighters.

All disasters are local and damage assessment, like disaster response, is primarily a local issue. In the face of a catastrophic, area-wide disaster, damage assessments are a valuable resource for those who must attempt to ultimately restore the community to a pre-disaster or better state. Prepared communities will be better served continuing their damage assessment work after federal damage assessment team members reach their "threshold" and call it a day (DHS OIG, 2012). A lack of federal guidance does not free local public safety and emergency management staff from the responsibility to provide an organized response to disasters and set a

course for recovery in the aftermath. The participants in this project all displayed a forward-leaning attitude with no indication that they would either wait for federal response before initiating recovery activities or prematurely stop damage assessment efforts based on a potential lack of participation by federal team members.

Recommendations

Mohave County Emergency Management, Bullhead City emergency response agencies should maintain or build upon the current environment of communication across agencies. After-action reviews consistently list communications as one of the key factors when things go horribly wrong. The presence of a high degree of cooperation and communication among first responder agencies and emergency management is an enviable community strength which should not be neglected.

The Bullhead City, Lake Havasu City, and Mohave Valley CERTs are invaluable community resources. Every effort should be made to continue to utilize these resources whenever possible, to provide quality continuing education to current members, to assist CERT leadership in finding ways to ensure retention of volunteers, and to maintain the existing vigorous support of the CERTs in whatever ways the participating agencies can offer.

Mohave County Emergency Management should evaluate the potential use of ADEM form PA 204-18 (Appendix D) in place of or in conjunction with the use of the current version of American Red Cross forms 5739A and 5739B (Appendix C). The American Red Cross forms are mostly geared toward Individual Assistance. County and municipal leaders will be primarily focused on Public Assistance and the ADEM form may be better suited to this purpose.

The two documents used by MCEM to train CERT members in disaster assistance (the Baton Rouge Emergency Operations Plan: Annex K referred to in references and the State of Iowa template (Appendix E) would be useful in creating a disaster assessment plan, but should go beyond where these two documents stop. The plan should indicate the responsibility placed on the CERT, specify the form to be used to document assessments, and identify at least primary and secondary means of relaying information to the EOC during a post-disaster response.

Ideally the plan would also provide mechanisms for deploying teams, maintaining accountability, and tracking their progress.

For Bullhead City specifically, a mechanism for deploying teams, maintaining accountability, and tracking progress would be fairly simple to set up. The entire state of Arizona is broken up into squares called sections which are delineated by a township and range. If each of these sections were broken up into quarter sections (dashed box in Figure 1), the quarter sections could be assigned, one or more at a time, to assessment teams.

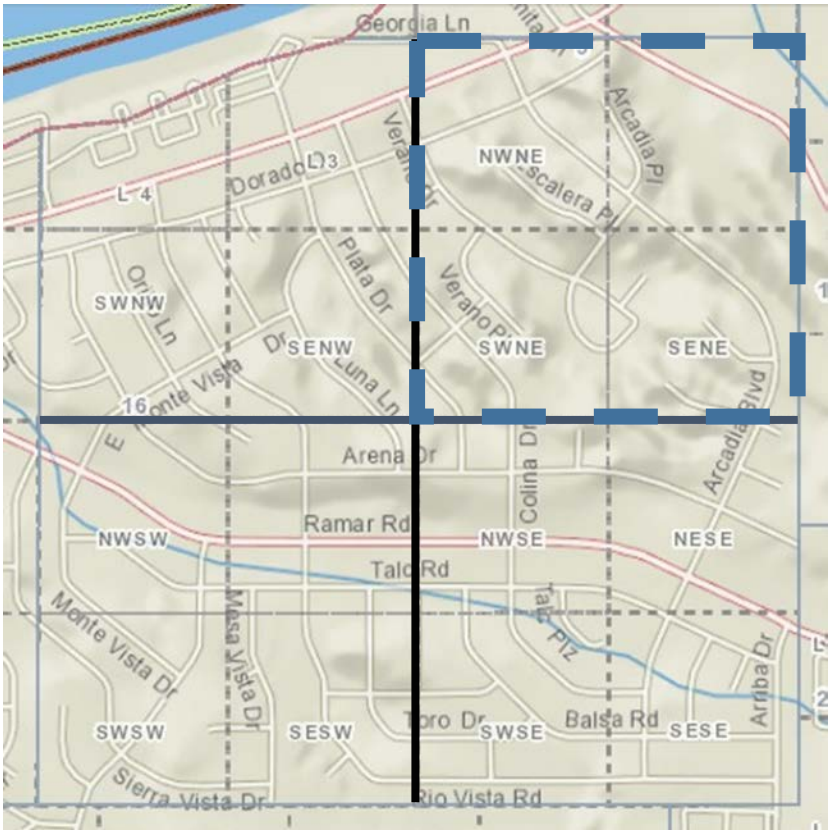

Figure 1

Maps and logs could be positioned at each fire station. As assessment teams report to a fire station, they could be given maps and the team assigned to each quarter section logged to avoid duplication of efforts and to maintain accountability for the assessment teams. Each map

should indicate either on the map or an attached sheet what target hazards, if any, are located in the quarter section being assessed.

Mohave County and Bullhead City should continue to seek to incorporate technology solutions like CrisisTrack, mobile video, and satellite imagery as they become accessible. Dam failure / Colorado River Flooding is a potential disaster for which technology exists to perform preplanning today. Using GIS and county assessor data, Bullhead City could estimate damage from flooding along the river for incremental river depths.

Future research should review any changes to forms Mohave County makes and assess any policy, procedure, or plan developed to guide disaster assessment. A field exercise would be an excellent method of testing the viability of any such plan. Research could also be revisited as new technologies are implemented to aid this process.

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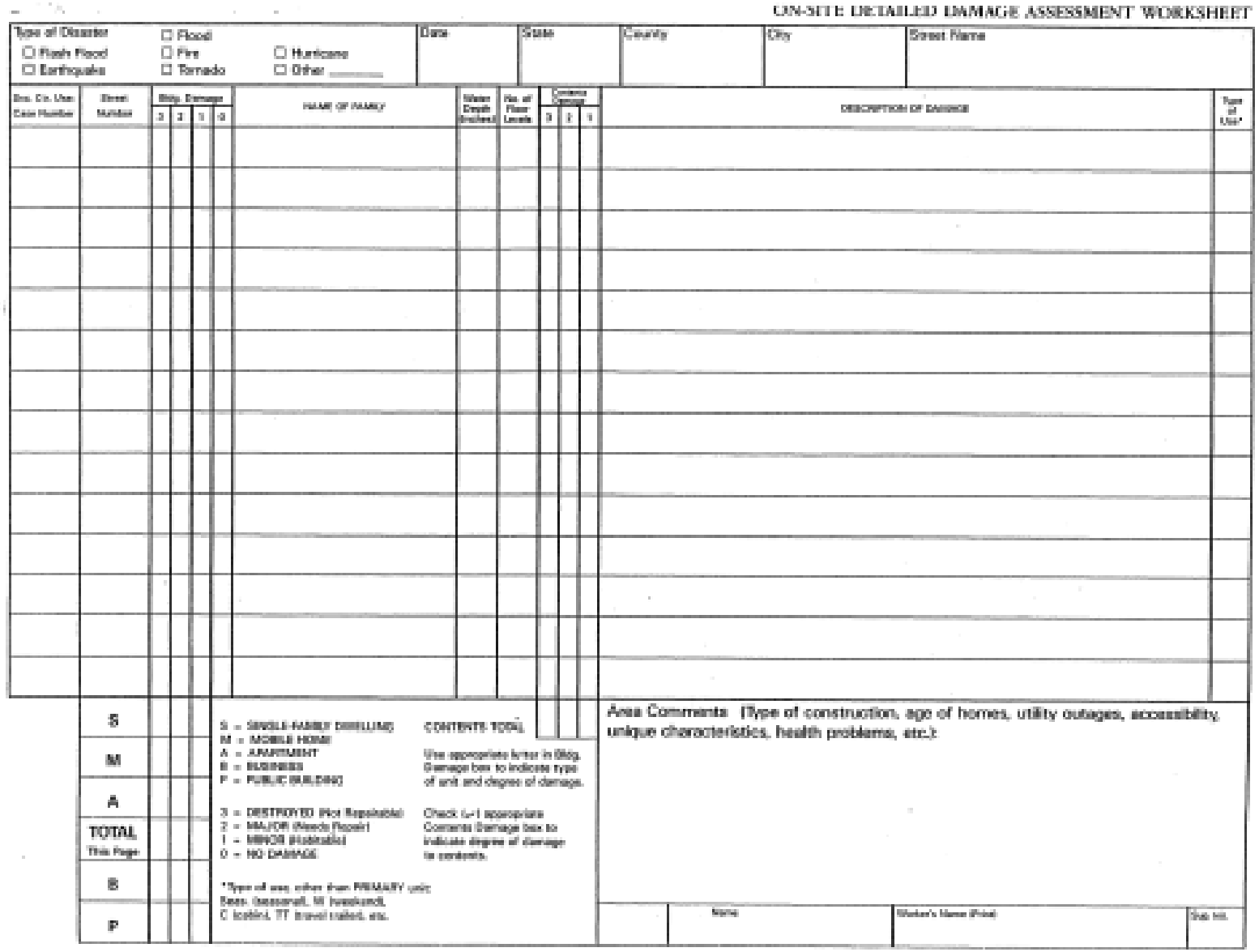
Appendix A

1. What are the community-wide risks faced by Bullhead City (flash flood, severe winds, any others?)?
2. If a disaster happened in Bullhead City tomorrow, who would be responsible for ensuring the preliminary disaster assessment is conducted?
3. Is there a plan for who will conduct the preliminary disaster assessment?
4. If Bullhead City were to develop a plan, what individuals / groups do you believe would be best suited for the task? (On-duty fire personnel, fire inspectors, CERT personnel, community volunteers, others?)
5. What do you see as the pros and cons of using on-duty fire personnel to perform preliminary disaster assessment?
6. What do you see as the pros and cons of using fire inspectors to perform preliminary disaster assessment?
7. What do you see as the pros and cons of using CERT personnel to perform preliminary disaster assessment?
8. What do you see as the pros and cons of using community volunteers to perform preliminary disaster assessment?
9. What do you see as the pros and cons of using others (if any) to perform initial disaster assessment?
10. Does Mohave County (or Bullhead City) have its own preliminary disaster assessment form?
11. Does Mohave County offer preliminary disaster assessment training?
12. What are any other Mohave County communities doing to plan for preliminary disaster assessment?
13. What are other Arizona communities doing to plan for preliminary disaster assessment?

14. Do you have any suggestions for how Bullhead City could better prepare to conduct preliminary disaster assessments?

Appendix B

SINGLE-FAMILY DWELLING "S"
or APARTMENT "A"
MOBILE HOME "M"
MAP OR ADDITIONAL INFORMATION
FLOOD AND FLASH FLOOD DAMAGE
Guide for Determining Water Depths
Brick: 2 ½ inches per course
Concrete or cinder block: 8 inches per course
Lap or aluminum siding: 4 inches or 8 inches
Door knobs: 36 inches above floor
Stair risers: 7 inches
Standard doors: 80 inches high
Damage to Look for and Note
Structural damage
Foundation damage
Floating or shifting on or off foundation
Wall penetrations
Broken windows
Postdisaster damage
Sewage backup
Utility outage
HURRICANE, TORNADO, THUNDERSTORM, AND HAIL DAMAGE
Structural Damage
Shifting on or off foundation
Wall collapse
Wall bowed in or out
Roof collapse
Roof truss damage
Total collapse
Other Damage
Roof penetrations
Percent of roof shingles missing or damaged
Percent of siding missing or damaged
Wall penetrations
Percent of windows broken
Chimney collapse
Utility outage
Water Damage (Wind-Driven Rain or Hail)
Plaster or paneling on walls and ceilings
Insulation
Flooring
Furniture
Appliances
EARTHQUAKE
Structural damage
Foundation damage
Fire
Piping ruptures
Interior demolition
Utility outage



ON-SITE DETAILED DAMAGE ASSESSMENT WORKSHEET

Type of Disaster
☐ Flash Flood ☐ Flood ☐ Fire ☐ Hurricane ☐ Earthquake ☐ Tornado ☐ Other _____

Date	State	County	City	Street Name

Enu. Dis. Unit: Enum Number	Street: Multiplier	Bldg. Damage 3	2	1	0	NAME OF FAMILY	Water Depth Inches	No. of Floor Levels	Contents Damage 3	2	1	DESCRIPTION OF DAMAGE	Type of Use*

S			
M			
A			
TOTAL This Page			
B			
P			

S = SINGLE-FAMILY DWELLING
M = MOBILE HOME
A = APARTMENT
B = BUSINESS
P = PUBLIC BUILDING

CONTENTS TOTAL

Use appropriate letter in Bldg. Damage box to indicate type of unit and degree of damage.

3 = DESTROYED (Not Repairable)
2 = MAJOR (Needs Repair)
1 = MINOR (Habitable)
0 = NO DAMAGE

Check (✓) appropriate Contents Damage box to indicate degree of damage to contents.

*Type of use, other than PRIMARY unit: Bus. (seasonal), W (weekend), C (cabin), TT (travel trailer), etc.

Area Comments: (Type of construction, age of homes, utility outages, accessibility, unique characteristics, health problems, etc.):

	Name	Worker's Name (Print)	Sup. Init.

State
Incident Type
PDA Team
FEMA
SBA
County
Area / Municipality
PDA Date
Page #
STATE
FED / LOCAL / OTHER
SINGLE FAMILY
MULTI - FAMILY
MOBILE HOME
Total Damaged
% Owner
% Ins.
% HO Ins.
% Low Income
Handicap Accessible
AFFECTED
MINOR
MAJOR
DESTROYED
owner
renter
Secondary
TOTAL PRIMARY
TOTAL SECONDARY
TOTAL (Incl Secondary)
ROADS / BRIDGES
Number of Roads / Bridges Damaged
Number of Households Impacted
UTILITIES
Number of Households Without Utilities
Estimated Date for Utilities Restoration
Comments

Appendix C

Street Name: _____

American Red Cross — **Detailed Damage Assessment Supplemental Worksheet**

DR #:	DR Name:	State:	County:	City/Community:	Date:
Street Name:		Geographic Reference:			

Address Range:	Approximate number of dwellings/units in this range of addresses:	Description of Damage		
		Destroyed: ____%	or general description:	
		Major: ____%		
		Minor: ____%		
		Affected: ____%		
Primary Dwelling Type: _____		Inaccessible: ____%		
Basements Prevalent? _____		Unknown/None: ____%		

Address Range:	Approximate number of dwellings/units in this range of addresses:	Description of Damage	
		Destroyed: ____%	or general description:
		Major: ____%	
		Minor: ____%	
		Affected: ____%	
Primary Dwelling Type: _____		Inaccessible: ____%	
Basements Prevalent? _____		Unknown/None: ____%	

Instructions:

- Complete the top line with the appropriate information for the street about which you are reporting.
- **Street name:** Document the complete street name including the designation, such as St., Ct., Dr., etc. (Check your spelling.)
- **Geographic reference:** Provide any information about the location of the street segment on which you are reporting, such as "Started assessment at the corner of Main St. and traveled West," or you can use this area to document the name of an area, mobile home park or apartment complex.
- **Address ranges:** Document the range of addresses being reported, such as 1455 to 1535. Also, document the primary dwelling type for the address range on which you are reporting, either single-family dwelling (SFD), mobile home (MH) or apartment/multi-family dwelling (Apt.).
- **Basements prevalent?:** Document if basements are prevalent in these address ranges by writing yes or no.
- **Approximate number of dwellings/units:** Document, to the best of your ability, the approximate number of dwellings or units within the address range on which you are reporting.
- **Description of damage:** Provide a breakout of the degree of damage by percentage for the approximate number of dwellings or units impacted for the address range. If a breakdown is not possible, please provide a general description of damage for the address ranges.

Page ____ of _____ Form 5739A

On-Site Detailed Damage Assessment Worksheet Instructions

DR Number: Enter the disaster relief operation (DR) number.
DR Name: Enter the disaster relief operation name.
State: Enter the two letter abbreviation for the state that the assessment covers.
County: Enter the name of the county that the assessment covers.
City/Community: Enter, to the best of your ability, the name of the city or community that the assessment covers.
Date: Enter the date the street sheet was completed
Street Name: Document the complete street name including the designation such as; St., Ct., Dr. etc. (Check your spelling) Also, use only one street per page even if you are only assessing one dwelling, do not mix streets. For more than ten dwellings for a street use multiple pages and document the number of pages at the very bottom of the page where is shows Page __of__
Geographic Reference: Provide any information about where the street segment is you are reporting on such as; Started assessment at the corner of Main St. and traveled West, or you can use this area to document the name of an area or mobile home park or apartment complex name.
House #: Enter the house number for the address being assessed. A maximum of ten dwellings or units can be documented per page. Enter only one dwelling/unit per line.
Apt./Unit #: Enter the individual unit or apartment number for the address being assessed. Remember, each living unit should be assessed on separate lines. Do not assess an entire apartment condominium building as one address.
Damage Classification: Circle the appropriate Dwelling Type for the dwelling/unit being assessed. Circle either the **S** for Single Family Dwelling or the **M** for Mobile Home or the **A** for an Apartment or multi-family dwelling. There should only be one circled letter per line. For example, if the dwelling being assessed for that line is a mobile home that has major damage, you would circle the **M** under the major damage column. Repeat this process for each subsequent dwelling (line.)
# of Floors in this dwelling or unit?: Enter the number of floors for the dwelling being assessed. Do not include basement information here. For apartments and multi-family dwellings: indicate the number of floors for each unit being assessed, do not document the number of floors for the entire building. The size and number of floors for the building can be documented in the "Description" line.
Is there a Basement?: Document if there is or is not a basement. Enter **Y** for Yes or **N** for No.
Water level in the living area: Through exterior visual observation, enter the level of water that is or may have been in the living area of the dwelling or unit. Do not include water in the basement in this column. Enter the water level in inches.
Water level in basement: Through exterior visual observation, enter the level of water that is or may have been in the basement of the dwelling or unit. If possible document in the description line if the basement may have been used as living space. Enter the water level in inches.
Is the electricity on?: Document if the electricity is on or off. Enter **Y** for Yes (on) or **N** for No (off)
Occupancy Type: Document to the best of your ability if the dwelling being assessed is Owner Occupied, Renter Occupied or is a seasonal dwelling. Enter **O** for owner occupied, **R** for renter occupied or **S** for seasonal.
OR/901: This column is to be used to document whether the assessed dwelling has been assigned to Outreach and/or if a case record (901) has been initiated.
Description: Document any additional information that will be beneficial to the individual assistance providers in visualizing the damage that has occurred to the dwelling. Any other useful information such as directions should also be recorded here.
Name: If possible, enter the last name of the family that lives in the dwelling being assessed.
Totals: Add each circled letter in each damage column and enter the number in the appropriate cell at the bottom of the page. For example; add each circled S (single family dwelling) in the destroyed column and enter the number in the row for Total Single Family: under the Destroyed column, Repeat this process for each damage classification and dwelling type.
Additional Information: Document any additional information that might be useful to other workers using the completed street sheet to provide service and assistance.
Worker Completing Form: Enter the first and last name of the primary worker completing the street sheet.
Supervisor: Have your supervisor review each street sheet and initial in this box when complete.

Single Family Dwelling "S" or Apartment "A"

Flood

Destroyed – 60+"
Major – 36" – 60"
Minor – 12" – 36"
Affected – 0" – 12" including basement flooding

Mobile Home "M"

Flood

Destroyed – 48+"
Major – 24" – 48"
Minor – 6" – 24"
Affected – 0" - 6"

Non-Flood Damage considerations:

Destroyed:	Major:	Minor:	Affected:
-Total collapse -Shifted on Foundation -Not economically feasible to repair -MH walls collapsed -MH turned over -MH frame buckled or significantly twisted	-Large portions of roof missing or debris penetration -One or two walls missing -Slight twisting or bowing of MH frame -Forceful penetration of MH walls with debris	-Minor structural damage -Damage to small sections of roof -Numerous broken windows -Large portions of roofing material and/or siding missing -Penetration damage where it is believed no structural damage has occurred	-Some shingles and/or siding missing -Debris against or around dwelling -Structure damage considered to be nuisance -MH skirting is damaged or missing -Dwelling is livable without repairs.

American Red Cross **Area Assessment Worksheet**

DR #:	DR Name:	State:	County:	City/Community:	Date:

Geographic Reference:

North Boundary

West Boundary

East Boundary

Approximate # of Dwellings/Units Impacted: _____

Destroyed: _____% **SFD:** _____%

Major: _____% **MH:** _____%

Minor: _____% **Apt.:** _____%

Affected: _____%

Inaccessible: _____%

General Information:

_____

_____

_____

_____

Basements Prevalent? _____

South Boundary

Instructions:

- Complete the top line with the appropriate information for the area you are reporting on.
- **Geographic Reference:** Use this section to document the name of an area or a mobile home park or apartment complex name.
- **Boundaries:** Provide the street names for each of the geographic boundaries that make up the area assessment. If there are more than four or less than four boundaries because of angled or curved streets, document that as well. Be creative and informative in your documentation.
- **Approximate number of dwellings/units Impacted:** Document to the best of your ability the approximate number of dwellings or units within the area you are reporting on.
- **Description of damage:** Provide a breakout of the degree of damage by percentage for the approximate number of dwellings/units impacted and provide a breakdown by dwelling type as well, if possible.
- **Basements Prevalent?:** Document if basements are prevalent in this area with a Yes or No.

Form 5739B

Street Name: ______

American Red Cross **On-Site Detailed Damage Assessment Worksheet (Street Sheet)**

DR #:	DR Name:	State:	County:	City/Community:	Date:
Street Name:		**Geographical Reference:**			

House #	Apt. /Unit #	Destroyed	Major	Minor	Affected	Inaccessible	# of Floors in dwelling or unit	Is there a Basement? Y/N	Water level in living area (inches)	Water level in basement (inches)	Is the electricity on? Y/N	Occupancy Type: Own? Rent? Seasonal?	OR / 901
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
		S M A	S M A	S M A	S M A	S M A							
Description:										Name:			
Total Single Family:							Additional Information:						
Total Mobile Home:													
Total Apartment:							Worker Completing Form:					Supervisor:	

Appendix D

ARIZONA DIVISION OF EMERGENCY MANAGEMENT **PRELIMINARY DAMAGE ASSESSMENT SITE ESTIMATE**			DATE
PART I — APPLICANT INFORMATION			
COUNTY	NAME OF APPLICANT	NAME OF LOCAL CONTACT	PHONE NO.

PART II — SITE INFORMATION

KEY FOR DAMAGE CATEGORY ***(Use appropriate letters in the "category" blocks below)***

a. DEBRIS REMOVAL	d. WATER CONTROL FACILITIES	g. OTHER ***(Parks, Recreational Facilities, etc.)***
b. PROTECTIVE MEASURES	e. PUBLIC BUILDINGS	
c. ROADS AND BRIDGES	f. PUBLIC UTILITIES	

SITE NO.	CATE GORY	LOCATION ***(Use map location, address, etc.)***
DESCRIPTION OF DAMAGE		
IMPACT:	% COMPLETE	COST ESTIMATE

SITE NO.	CATE-GORY	LOCATION ***(Use map location, address, etc.)***
DESCRIPTION OF DAMAGE		
IMPACT:	% COMPLETE	COST ESTIMATE

SITE NO.	CATE-GORY	LOCATION ***(Use map location, address, etc.)***
DESCRIPTION OF DAMAGE		
IMPACT:	% COMPLETE	COST ESTIMATE

SITE NO.	CATE-GORY	LOCATION ***(Use map location, address, etc.)***
DESCRIPTION OF DAMAGE		
IMPACT:	% COMPLETE	COST ESTIMATE

NAME OF INSPECTOR	AGENCY	OFFICE PHONE NO.	HOME PHONE NO.

FORM # AZ PA 204-18

Appendix E

Annex C

DAMAGE ASSESSMENT

I. PURPOSE

This Annex describes the uniform damage assessment process to document damage from incidents or disasters in Iowa. Information gathered with this process may be used to determine the extent of damage and impact on the community resulting from a disaster to justify future federal funding, declarations of emergency, and disaster proclamations. An accurate damage assessment is a necessary part of the recovery phase and determines qualification for state and federal disaster aid. Future mitigation funds will also be determined by damage assessments.

II. REFERENCE

For Public Assistance (PA) refer to The Book - A Guide to Local Damage Assessment issued by the State Homeland Security and Emergency Management Division.

For Individual Assessment (IA), training sessions are provided by the IHLSEM Response and Recovery Bureau Staff - Disaster Assessment for Residential and Business Property.

III. SITUATION

_____ County is situated in an area considered highly susceptible to numerous hazards that have the potential to cause extensive damage to both public and private property. In the event of an incident, planned and exercised damage assessment procedures are essential for effective response and recovery operations. The specific hazards and vulnerability to these hazards are outlined in detail in the Hazard Assessment that has been completed for the County.

IV. ASSUMPTIONS AND PLANNING FACTORS

A. The prompt and accurate assessment of damage to public and private property following an incident will be of vital concern to local officials in order to facilitate an effective and rapid response.

B. An extensive damage assessment is necessary to support requests for future planning, response and recovery programs offered at the state and federal levels. An accurate damage assessment will also support post disaster mitigation efforts.

C. For any emergency involving radiological materials, the Bureau of Radiological Health, Iowa Department of Public Health has sole responsibility for making technical assessments.

IV. ORGANIZATION/RESPONSIBILITIES

A. The County Emergency Management Coordinator

The County Emergency Management Coordinator manages the damage assessment effort and assigns team leaders. Specific responsibilities include, but are not limited to, the following:

1. Serves as primary contact in the county during all phases of an emergency/disaster.
2. Gathers and organizes information from other agencies and sources.
3. Manages the damage assessment process
4. Activates the Damage Assessment Team.
5. Makes an initial determination on the extent of the damage.
6. Submits information to the State Homeland Security and Emergency Management Division
7. Applies information gathered to local needs, such as recovery and hazard mitigation

B. Damage Assessment Teams (DAT)

Damage assessment teams will consist primarily of public, private, and agricultural sector personnel knowledgeable of the impacted area.

C. The emergency mission of the Damage Assessment Team is to:

1. Obtain training through the County Emergency Management Coordinator. This training is supported by the State Homeland Security and Emergency Management Division
2. Respond to the County Emergency Management Coordinators' call for damage assessment.
3. Work with other team members to collect damage data needed for preliminary, interim and final assessments.

4. Conduct assessments according to procedures located in relevant referenced quidance.

5. Complete assessments in required time frame as specified in relevant referenced quidance.

D. Agricultural Disaster Assessment

The assessment of agricultural damages and impacts will be accomplished by the County Farm Service Agency in conjunction with the County Emergency Management Agency. Report damages and losses to livestock, fences, terraces, crops, farm equipment, bins, out buildings, and debris to the County Farm Service Agency.

Farm home damages are reported to the County Emergency Management Coordinator. The Coordinator should become involved in the County Emergency Board. Primary Board members are Iowa State University Extension, Natural Resource Conservation Service, and the Farm Service Agency.

V. CONCEPT OF OPERATIONS

A. Individual Assistance (IA)

1. Preparedness and readiness activities are the keys to timely, efficient and accurate damage/impact assessments during the response phase. Assessment information is categorized in one of four categories. These categories are Residential, Business, Infrastructure, and Agricultural. Disaster Assessments are necessary for two primary reasons. First and foremost, impact and damage information identifies the immediate needs of disaster victims in each of the 4 disaster assessment categories. These needs assessments must be conducted to determine the amount and level of assistance required to save lives and protect property. Secondly, Disaster Assessments of the four categories are required when local officials seek financial assistance from state and federal governments.

The first assessment conducted should focus on the people's needs. This begins with identifying the extent of damage to homes and how these damages impact the homeowner or renter. A homeowner or renter will need local governments assistance when the damaged home is not safe, sanitary, or secure.

The threshold for determintg when to conduct Residential, Business, and Agricultural assessments is whenever the disaster is

of such magnitude and impact that disaster victims cannot recover without assistance for essential needs. Initial Assessments must conducted by local officials. The threshold trigger on when to deploy Disaster Assessment Teams for gathering residential, business, and agricultural impacts is based on, not so much the damage in dollars, but the level of damage. The primary focus is on the number of structures that sustained damage. The Teams evaluated extent of damage earmarks a structure in one of following levels of damage: Destroyed, Major, Minor, Affected but Habitable, and Inaccessible.

2. Local Situation Report (Sit Rep)

Whenever there is a natural disaster or significant hazardous materials release in the county, a local situation report must be completed and transmitted to the State Homeland Security and Emergency Management Division. The impacts and damages noted on the sit rep will determine whether Disaster Assessment teams will be called out to complete a Rapid Assessment Survey.

3. Rapid Assessment Survey

A Rapid Assessment Survey, also known as a "Windshield Survey" by Red Cross is a hash mark tally of impacted residential and business structures. If the County Coordinator has a good working relationship with the local Red Cross chapter, the information gathered from the Red Cross Windshield Survey may be used for reporting numbers of impacted structures to the State. Once the number of homes impacted in each of the previously mentioned damage categories is known, this information will determine the deployment of a Disaster Assessment team to gather detailed information about the structures and residents impacted.

4. Residential and Business Assessment

Information gathered by Disaster Assessment team members provides an in-depth look at the disaster event. This form gathers detailed name and address information, notes damage category, single-family versus multi-family information, and seeks to obtain additional information to include senior citizen status, income level, own/rent status, and level of insurance coverage.

5. Disaster Assessment Summary

The final form used in assessing Individual Assistance damages is the Disaster Assessment Summary. This form compiles all of the information gathered on the Residential and Business Assessment forms. The Disaster Assessment Summary may be completed by either the County Coordinator, or State Homeland Security and Emergency Management Division staff.

B. Public Assistance (PA)

1. Preparedness and readiness are the keys to timely, efficient and accurate damage assessment. Damage Assessment is as important an activity as anything done in emergency management. Among the steps to be taken are the establishment of a central contact (the County Emergency Management Coordinator and the Emergency Operations Center (see Form 1). Before any disaster occurs, the local damage threshold amount for your county should be established (see Form 2). If the Initial Desk Report indicates damages are equal to or greater than the threshold amount, then the Preliminary and Final Damage Assessment must be completed.

A tracking system or log of events during an emergency will help in determining areas of damages and volunteer credit and contact points during the recovery phase. Form 3 is a sample of such a procedure.

The establishment of a Damage Assessment Team (Form 4) and their training is key to a successful Damage Assessment. Form 4 also identifies additional EOC staff support and communication needs. Form 6 is the format for a telephone tree to facilitate the contacting of key personnel.

Critical facilities and special needs facilities must be identified prior to any emergency. Form 5 provides for the identification and immediate contact of these facilities for purposes of warning and communication.

2. Initial Desk Report (IDR)

Whenever there is a natural disaster or significant hazardous materials release in the county, an Initial Desk Report must be completed "immediately" and returned to the State Homeland Security and Emergency Management Division. The dollar value of damage reported in the Initial Desk Report determines whether the Damage Assessment Team will be called out to complete the next steps, the Preliminary

Damage Assessment (PDA) and Final Damage Assessment (FDA). Threshold for Assessment (Form 2) factors both population and amount of damage to determine whether the Damage Assessment Team will be activated.

3. Preliminary Damage Assessment (PDA)

Once a determination is made to activate the Damage Assessment Team (the total dollar damage reported on the Initial Desk Report exceeds the threshold dollar amount), the Damage Assessment Team conducts a preliminary data gathering. Within 36 hours from the incident, the Damage Assessment Team conducts on-the-scene surveys and assessment of damages to residential, commercial, public and agricultural areas. The information is given to the County Emergency Management Coordinator, who summarizes the data and transmits that report to the State Homeland Security and Emergency Management Division and appropriate local officials. If a Preliminary Damage Assessment is submitted, a Final Damage Assessment must be completed within 7 days from the incident.

4. Final Damage Assessment (FDA)

The Final Damage Assessment is conducted to update, verify and collect detailed information on damages and their costs. This includes gathering the data needed to complete the Economic Impact Analysis.

The Final Damage Assessment will begin immediately after the completion of the Preliminary Damage Assessment or as soon after the Initial Damage Assessment as allowed by conditions. The County Emergency Management Coordinator will complete the Final Damage Assessment Summary (Form 28) within seven days from the incident and transmit data to the State Homeland Security and Emergency Management Division and local officials.

C. Economic Impact Analysis (EIA)

At the time the Final Damage Assessment summary form is completed, the Economic Impact Analysis (EIA) shall be completed and submitted within seven days from the incident. Information from The Economic Impact Analysis will be used by State Homeland Security and Emergency Management Division in forecasting economic impact of disasters on communities and long term decisions.

VI. FORMING AND TRAINING THE TEAMS (IA)

Readiness & Response Bureau staff from Iowa Emergency Management Division, offer a three hour training session on forming and training Disaster Assistance team members at the local level to assist with assessments when needed. The training session details each of the forms used, provides information on criteria for each damage category, and ends with a brief tabletop exercise consisting of photos of damaged homes, so attendees can practice skills learned during the session. Being able to respond quickly with well-trained, knowledgeable staff, will help lessen the chaos caused by a disaster event. To schedule training, contact the Administrative Assistant for the Readiness Response Bureau at 515-281-3231.

VII. ADMINISTRATION AND LOGISTICS

Plan Maintenance

The Damage Assessment Team Leader should meet semi-annually with the damage assessment team comprised of local agencies and organizations involved with damage assessment to review and/or revise this portion of the plan.

Annex C

LIST OF ADDENDA

Annex C
Attachment 1

DAMAGE ASSESSMENT
EMERGENCY RESPONSE CHECKLIST

(Checklists are here only for guidance in developing a more specific checklist appropriate for each locality)

READINESS PHASE

COUNTY EMERGENCY MANAGEMENT COORDINATOR

_____ Attend training in the damage assessment process.

_____ Establish central point of contact - and EOC and disseminate that information to appropriate officials and entities. (See Form 1)

_____ Establish Damage Assessment Teams. (See Form 4)

_____ Train Damage Assessment Teams.

_____ Purchase supplies/equipment for Damage Assessment Team such as cellular phones and pagers to facilitate direction and control.

_____ Establish local damage amount--threshold amount--for completing damage assessment. (See Form 2)

_____ Establish tracking system for use during all phases of damage assessment. (See Form 3)

_____ Maintain current maps of the county and communities within the county.

_____ Maintain supply of all forms needed for each phase of damage assessment.

_____ Identify and develop additional staff support for the EOC. (See Form 4)

_____ Develop list of critical facilities and special needs in the county and each community. (See Form 5)

_____ Keep track of volunteer credit

_____ Distribute to city and County offices Daily Activity report (Form 8), Daily Work Summary (Form 9), and Preliminary Estimate of Eligible Disaster Work (Form 10).

Annex C
Attachment 1

DAMAGE ASSESSMENT
EMERGENCY RESPONSE CHECKLIST

RESPONSE PHASE

COUNTY EMERGENCY MANAGEMENT COORDINATOR

_____ Notify Damage Assessment Teams and other agencies with damage assessment responsibilities (see Form 6).

_____ Assign EOC Damage Assessment Staff.

_____ Define perimeter of disaster area.

_____ Brief local emergency services of initial damage assessment procedures and requirements.

_____ Ascertain safety of affected areas prior to sending field teams in for damage assessment.

_____ Assign Damage Assessment Teams to specific survey areas.

_____ Coordinate and compile damage reports from Damage Assessment Teams (private, public, and agricultural) and advise EOC Executive Staff.

_____ Complete Initial Desk Report (Form 7) and forward Initial Desk Report to the State EOC. (PA)

_____ Complete Local Situation Report (App3) and forward to State EOC.

_____ Train and assign personnel to assist in collecting damage reports. Provide for expedient training of Damage Assessment Teams if necessary.

_____ Contact city and county offices to notify them of the need and deadline for providing records of emergency work expense. See Daily Activity report (Form 8), Daily Work Summary (Form 9), and Preliminary Estimate of Eligible Disaster Work (Form 10) (PA).

NOTE: Depending on the circumstance, situation and speed of the incident, you may want to activate the Damage Assessment Team during the Response Phase.

Annex C
Attachment 1

DAMAGE ASSESSMENT
EMERGENCY RESPONSE CHECKLIST

RECOVERY PHASE

COUNTY EMERGENCY MANAGEMENT COORDINATOR (PA)

_____ Activate Damage Assessment Team.

_____ Complete the Preliminary Damage Assessment (Form 16) within 36 hours from the incident and submit to HLSEM.

_____ If incident prevents completion of Final Damage Assessment, complete Interim Damage Assessment Summary (Form 22) seven days from the incident and submit to HLSEM.

_____ Complete Final Damage Assessment Summary (Form 28) within seven days from the incident and submit to HLSEM.

_____ At the same time the Final Damage Assessment is completed, also complete the Economic Impact Analysis (Form 29) and submit to HLSEM.

_____ Coordinate support for state and federal Public Damage Inspection Teams.

_____ Assist in preparation of requests for state and federal assistance.

DISASTER ASSESSMENT TEAM (PA)

_____ Complete Preliminary Damage Assessment forms 11, 12, 13, 14 and 15. Provide information to County Emergency Management Coordinator.

_____ Complete Initial Damage Assessment if necessary. See Forms 17, 18, 19, 20, and 21.

_____ Complete Final Damage Assessment using Forms 23, 24, 25, 26, and 27.

DISASTER ASSESSMENT TEAM (IA)

_____ Complete Residential & Business Assessment Form (Disaster Assessment for Residential & Business Property Appendix 5).

_____ Be prepared to accompany FEMA on Joint PDA.

_____ Complete Disaster Assessment Summary Form (Disaster Assessment for Residential & Business Property Appendix 6).

Annex C
Attachment 2

The Book: A Guide To Local Damage Assessment Forms (PA)

Form 1 - Disaster Damage Assessment and Emergency Operations Center
Form 2 - Threshold for Assessment
Form 3 - Log of Disaster Activity
Form 4 - Damage Assessment Directory
Form 5 - Critical and Special Facilities
Form 6 - Activating the Damage Assessment Teams Telephone Tree
Form 7 - Initial Desk Report (IDR)
Form 8 - Daily Activity Report
Form 9 - Emergency Work Form Daily Work Summary
Form 10- Preliminary Estimate of Eligible Disaster Work
Form 11- Preliminary Damage Assessment PDA - Additional Information
Form 14- Preliminary Damage Assessment PDA - Public Facilities
Form 16- Preliminary Damage Assessment PDA - Summary
Form 23- Final Damage Assessment FDA - Additional Information
Form 26- Final Damage Assessment FDA - Public Facilities
Form 28- Final Damage Assessment FDA - Summary
Form 29- Economic Impact Analysis

Disaster Assessment for Residential & Business Property (IA)
App 3- Local Situation Report
App 4- Rapid Assessment Survey
App 5- Residential & Business Assessment
App 6- Disaster Assessment Summary